



ADVANCED WARNING

SYSTEMS

ZoneSense PLUS



**Fire Alarm Control Panel
EN54 2 & 4 1997**

Operation & Programming

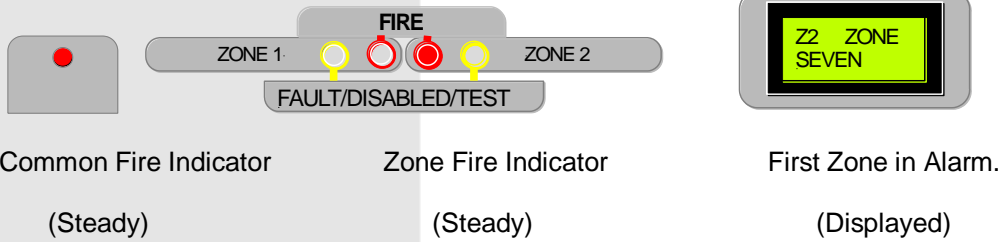
MAN 2374-10

WORLD LEADER OF INNOVATIVE SOLUTIONS
IN FIRE DETECTION AND ALARM SYSTEMS



Responding to an Alarm

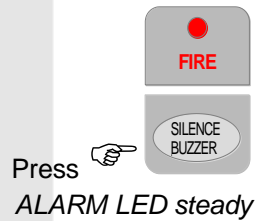
1. Indicators



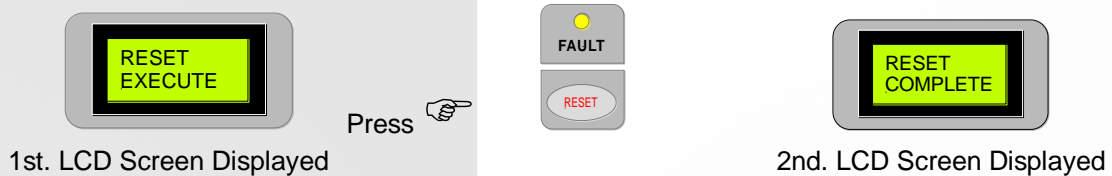
2. To Disable External Sounder and / or Sound Evacuation



3. To Silence Buzzer



4. To Reset Panel



Disabling a Zone

The following example DISABLES ZONE Place the keyswitch to the ENABLED position.

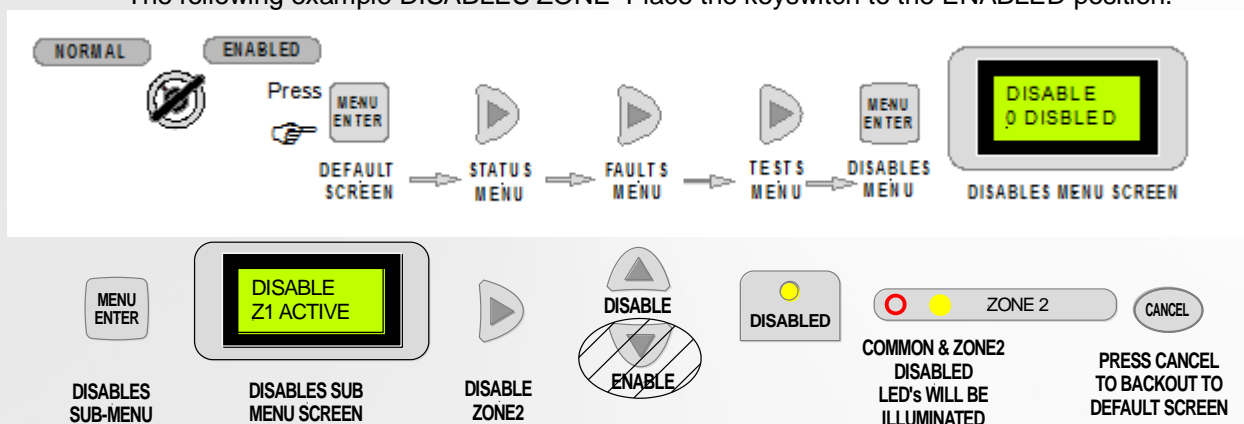


TABLE OF CONTENTS

Page No.

1	<i>Introduction</i>	<i>1</i>
1.1	Purpose	1
1.2	Scope	1
1.3	References.....	1
2	<i>Controls – Front Panel Controls, Indicators & Testing.....</i>	<i>2</i>
2.1	System Controls and Indicators	2
2.2	Levels of Access	2
2.3	Passwords	2
2.4	System Controls.....	3
3	<i>Indicators – Front Panel.....</i>	<i>4</i>
3.1	Status Indicators	4
3.2	Common Indicators	5
3.3	Zone Indicators	5
3.4	Liquid Crystal Display	5
3.5	Normal Operation	6
3.6	Main Menu	6
4	<i>Level 1 Access</i>	<i>7</i>
4.1	Status	7
4.1.1	Relays.....	7
4.1.2	Sounders.....	8
4.1.3	Voltage.....	8
4.1.4	Software.....	8
4.2	Faults.....	9
5	<i>Level 2 Access</i>	<i>10</i>
5.1	Tests.....	10
5.1.1	Fault Test of Each Zone	10
5.1.2	Walk Test	11
5.1.3	Battery Test.....	11
5.2	Disables	12
5.2.1	Zone, Relay or Sounder.....	12
5.2.2	Outputs	12
6	<i>Level 3 Access Programming.....</i>	<i>13</i>
6.1	Password Entry	13
6.2	System.....	14
6.2.1	Buzzer.....	14
6.2.2	Mimic	14
6.2.3	Code	15
6.3	Program	15
6.3.1	Zones.....	15
6.3.2	Zone Delay.....	16
6.3.3	Clock.....	16
6.3.4	Outputs	16
6.3.5	Relays.....	17
6.3.6	Fire Fan	18

6.3.7	Agent	19
6.3.8	Sounders.....	20
6.3.9	Indicate	20
6.3.10	Display	20
6.3.11	Zone Labels	20
6.3.12	EOL (END OF LINE)	21
6.3.13	Zone S/C.....	21
7	<i>Appendix A: EN54 Menu Structure.....</i>	22
7.1	Status	22
7.2	Faults.....	22
7.3	Test.....	23
7.4	Disable.....	23
7.5	System.....	24
7.6	Program	25
8	<i>Appendix B: Simple Example Wiring Diagram of a Basic FACP</i>	26
9	<i>Appendix C: EN54 ABS Inner Front Panel Configuration Labelling.....</i>	28

1 Introduction

1.1 Purpose

This manual is an instructional tool for the programming / reprogramming and operation of the ZoneSense PLUS Fire Alarm Control Panel (FACP).

Using 3 levels of access the ZoneSense PLUS Fire Alarm Control Panel (FACP) is controlled and programmed this through the keypad on the front panel.



Note: To assist in the programming process the screens or Menus presented to the operator are diagrammatically shown as an Appendix at the end of the document.

1.2 Scope

The information within this manual is only available to and for the use of personnel engaged in the installation and operation of the **ZoneSense PLUS** FACP.

ZoneSense PLUS has been designed to comply with major world standards. To ensure these standards are not compromised in any way installation staff and operators should;

1. Be qualified and trained for the task/s they undertake;
2. Be aware this manual should be read prior to the installation and commissioning of the **ZoneSense PLUS** FACP;
3. Observe anti-static pre-cautions at all times; and
4. If a problem is encountered or there is any doubt with respect to the operational parameters of the installation the supplier should be contacted.



Note: It is strongly recommended that all front panel changes and or programming be appropriately recorded.

1.3 References

ZoneSense PLUS Technical Manual

ZoneSense PLUS Programming Manual

Apollo Detector / Device Manuals

Ampac Product Data Sheets

British Standard: BS 5839

European Standard: EN54 Parts 2 & 4



Figure 1: Examples of the ABS (BX1) and Metal (BX10) Cabinets

2 Controls – Front Panel Controls, Indicators & Testing

2.1 System Controls and Indicators

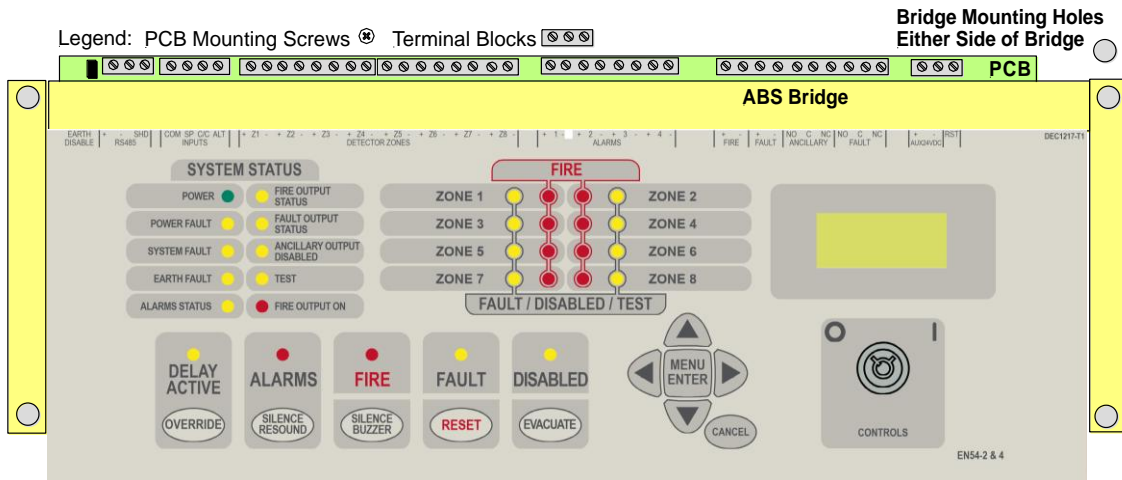


Figure 2: Exploded Front View of Membrane, Bridge and PCB for the ABS Model

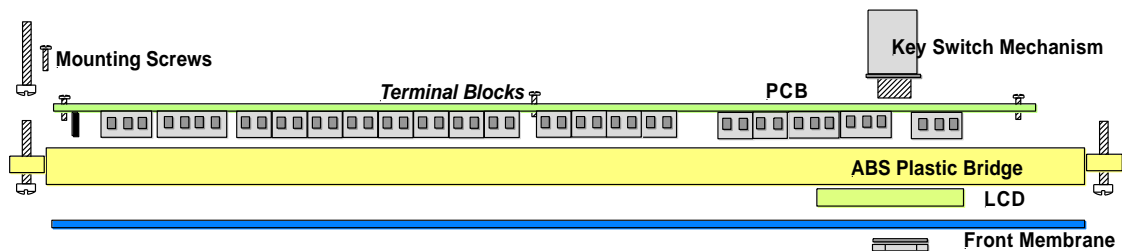


Figure 3: Exploded Top View of Membrane, Bridge and PCB

2.2 Levels of Access

It is a requirement that access to a Fire Alarm Control Panel be restricted to trained authorised operators and technicians. To meet this requirement;

- Levels 1 access is view only, pressing the Menu button at level 1 gives access to the read only Fault and Status display menus.;
- Levels 2 access is restricted by way of keyswitch control. Access to level 2 is gained by switching the control switch from Normal to Enable.;
- Level 3, passwords are entered using the keys on the front panel.

2.3 Passwords

Passwords for level 3 are a fixed 4 digit number (pre-commissioning factory set to 3333).

The metal cabinet version of ZoneSense PLUS with an outer front door but no control enable key switch fitted has a link across the key switch terminals.



Note: Sequential button presses must take place within 10 seconds of each other otherwise the display will return to its normal state.

2.4 System Controls

The front panel consists of thirteen push button controls and a key switch.

NORMAL

ENABLED



Controls, Normal – Enabled (Key Switch) A key switch for controlling system access between levels 1 and 2. All Control Enable key switches fitted to EN54 panels are keyed alike. This key is unique to Ampac.



Delay Override Used to turn Off the delays to outputs programmed in to the panel. The actual delays are programmed at level 3 and delay the action of Alarms and / or FBR outputs. The switch only operates when the panel is in alarm and a delay is active. Operating this switch under these circumstances will override delays to all zones sounding the alarms immediately and cause the Delay Active LED to turn off. (Refer also to Delay Active LED).

Each zone can be individually programmed with Delay to Outputs and have individual time selection of 30 to 210 seconds.



Silence / Resound Alarms Active at access level 2 and is used to turn the “Alarms output” Off/On once they have been operated by an alarm condition. In the event of a new alarm being received the alarms will again operate. The same control is used to toggle on the “Alarms Output” once they have been silenced to reactivate the alarms that were originally operating.



Silence Buzzer Is used for silencing either the audible fault warning or audible alarm warning (buzzer). For faults at access level 1 operation of the control will cause the buzzer to operate intermittently at 10 sec intervals. At access level 2 operation of the control will mute the buzzer though it will resound on any new event.

In Fault the buzzer automatically silences on clearance of the fault.

On Alarm the Buzzer Silence will only be active at access Level 1 and manually silenced as there is no automatic silencing of the fire condition.



Reset The Reset button is operational at access level 2 and is only used to return the control panel back to a Normal state from the fire Alarm condition.

It will not reset a disablement condition.



Evacuate Turns on and latches Alarm outputs, internal buzzer and the Fire LED at access level 2. The Silence Alarms and or Reset button silences the alarms activated by the Evacuate button.

It does not operate the Ancillary relay though a programmable option allows the “Evacuate” to operate the “FBR” output.

For the purposes of this explanation the following indicators perform these



Enter or **Menu** is used to update the program once the control settings have been set and to access the various menus and sub-menus.



Move Left



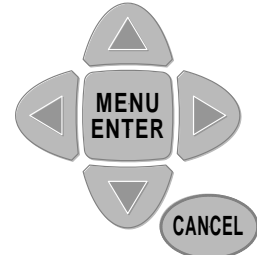
Move Right allows the operator to move left or right through a menu or the options to be set.



Move Up



takes the cursor up or down through the menus and / or options.



**CANCEL STEPS BACK
THROUGH THE MENU**

functions;

3 **Indicators – Front Panel**

All indicators are visible at access level one. If flashing indicators are used the on / off periods are >0.25 seconds and the flash frequencies are not less than:

1Hz for Alarm indications

0.2Hz for fault indications.

If the same indicator is used for fault and disablement (isolate) then the fault indicator flashes and the disablement (isolate) will be steady and has priority.

All indicators are steady unless otherwise stated.

3.1 **Status Indicators**

There are ten indicators within the system status area of the front panel.



Power – Green Indicates that the FACP is supplied with power (mains or battery). Flashes when mains has failed.



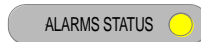
Power Fault – Amber Common fault to the system power supply. Either mains or battery.



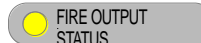
System Fault – Amber Indicates a failure of the FACP to provide mandatory functions, e.g. software failure.



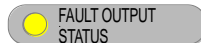
Earth Fault – Amber Is an indication only to warn of a fault to earth that may affect a mandatory function.



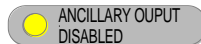
Alarms Status– Amber Illuminated (flashing) if any Alarm Output is in fault or disabled.



Fire Output Status– Amber Illuminates when the monitored open collector “Fire Out” output is in a fault condition (flashing) or disabled (steady).



Fault Output Status– Amber Illuminates when the monitored open collector “Fault Out” output is in a fault condition (flashing).



Ancillary Output Disabled – Amber Illuminates when the “Ancillary Out” output relay is disabled (steady).



Test – Amber Indicates that the panel is in Walk Test mode.



Fire Output On – Red Illuminates (steady) when the monitored open collector “Fire Output” is on.

3.2 Common Indicators

There are five indicators within the control area of the front panel.



Delay Active / Override – Amber When one or more zones are programmed with delay this indicator shall be “On” (steady) with the panel in the normal state or with a zone on the panel in alarm which is not programmed with Delay. The LED will flash when a zone programmed with Delay goes into an alarm state. If the Delay Override switch is not pressed prior to the pre-set Delay timing out, the indicator will continue to flash until timeout, at timeout it shall extinguish. This indicator is integral with the “Delay Override” button. A master reset will reset the original programmed state and delays on the panel.



Silence / Resound Alarms – Amber An indicator to show whether or not the Alarms have been silenced after they have been activated in response to an alarm condition. This indicator is integral with the “Alarms Silence / Resound” button.



Fire – Red Common Fire indicator. (Also illuminated by operation of the Evacuate button).



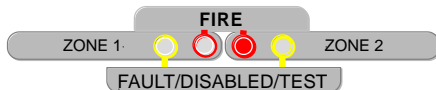
Fault – Amber Common Fault indicator illuminated by the presence of any fault.



Disabled – Amber Common Disablement indicator illuminated by the presence of any disablement.

3.3 Zone Indicators

There are two indicators for each alarm zone fitted to the panel.



Zone Fire – Red

Indicator showing individual zone/s in the condition fire (steady).

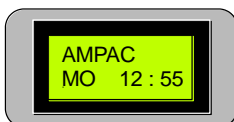
Zone Fault / Disable / Test – Amber

Illuminated by a fault condition on individual zone (flashing), disablement of the zone will change the LED condition to (steady). A zone in fault that has been disabled will flash at a different rate than when only in fault, the off period shall be the same with the on period being x 3 of the fault flash rate.

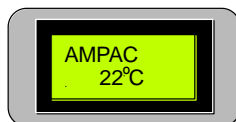
3.4 Liquid Crystal Display

The panel is fitted with an 8 x 2 LCD. The primary purpose is to display Zone alarm / fault / disable information and prompts for system commands come programming. Alarm, Fault and Isolate information is accessed through the Main Menu. When the FACP is in its normal state a default screen will be displayed.

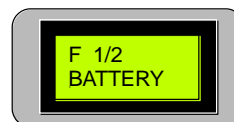
Examples of possible LCD Displays



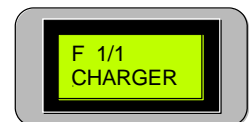
Default Screen 1



Default Screen 2



Fault 1 off 2



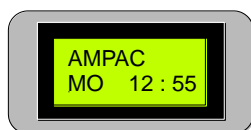
Fault 1 off 1

Battery Fault

Charger or Power Fault

3.5 Normal Operation

During normal operation the panel LCD default screen will display the panel name, the day and the time.



Abbreviations: SU - SUNDAY
MO - MONDAY
TU - TUESDAY
WE - WEDNESDAY
TH - THURSDAY
FR - FRIDAY
SA - SATURDAY

To access the Main Menu press **Enter**.



Note: If the keypad controls are not used for a period of 2 minutes the display will return to the default screen.

3.6 Main Menu

The Main Menu consists of;

Level 1	Level 2 Activate Control	Level 3 Enter Password
STATUS	FAULTS	TEST
	DISABLES	SYSTEM
		PROGRAM

Press the ► Move Right / ◀ Move Left key to move through the menu.

Press **Enter** to access the sub – menus.

► **Move Right** to access **STATUS**

4 Level 1 Access

Is a read only menu that allows the operator to;

- Interrogate the panel to determine the state of selected outputs;
- View any faults that may be present on the FACP.

STATUS

FAULTS



Note: Use Cancel at any time to step back out of the current Menu.

4.1 Status

Press **Enter** to view the Status Menu. Press **▶ Move Right** to move through the menu or **Enter** to access the Status sub-menus.



Note: The sub-menu headings are in *Italic*.

O/Ps	Brigade	Relays	Fire Fan	Agent	Snders	I/Ps	Voltage	Software
Alarm 1	On	On	On	On	On	On	Battery volts	Version
Alarm 2	Off	Off	Off	Off	Off	Off	Charger volts	
Alarm 3							System Volts	
Alarm 4								
Fire								
Fault								
AUC out								

Outputs

Press **Enter** then **▶ Move Right** or **◀ Move Left** to view the monitored *Alarm 1 to 4, Fire, Fault or AUC Outputs* status.

The LCD readout will indicate if the selected Output is;

On and Normal, or Off and Normal, or Off and Disabled, or On and Disabled or Output is On and in Fault or Off and in Fault.



Sample Output Screens

Meaning: The O/P is either On (activated) and Normal, or Off (de- activated) and Normal, or On (activated) and Disabled, or Off (de- activated) and Disabled.



Note: The following are examples of some of the sub-menu but not all of them.

4.1.1 Relays

Press Enter then **◀ Move Left** or **▶ Move Right** to select the required Relay (1 – 8). The LCD read out for each relay will indicate if the selected relay is On, Off or Disabled OR Press **▶ Move right** to access Sounders.



Sample Relay Screens

Meaning: A Relay is either On (activated), or Off (deactivated) or Disabled.



Note: The relay's control function is identified in the configuration documentation

4.1.2 Sounders

Press **Enter** then ◀ Move Left or ▶ Move Right to select the required Sounder (1 – 8). OR press ▶ **Move right** to access **Voltage**. The LCD readout will indicate if the Sounder is;

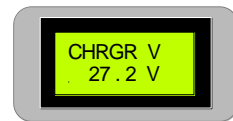
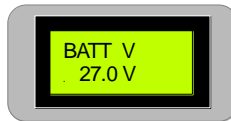
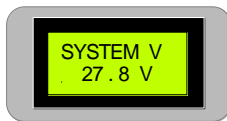


Sample Sounder Screens

Off and Normal, or Off and in Fault, or On and Normal, or On and in Fault, or Disabled and Normal, or Disabled and in Fault.

4.1.3 Voltage

Press Enter press and the Battery Voltage will be displayed, pressing ▶ Move Right will display the Charger Voltage (≈27.2volts), pressing ▶ Move Right again will display the System Voltage OR Press ▶ Move right to access Software.



Voltage Screens

4.1.4 Software

Displays the installed version of software. (This is for information only)



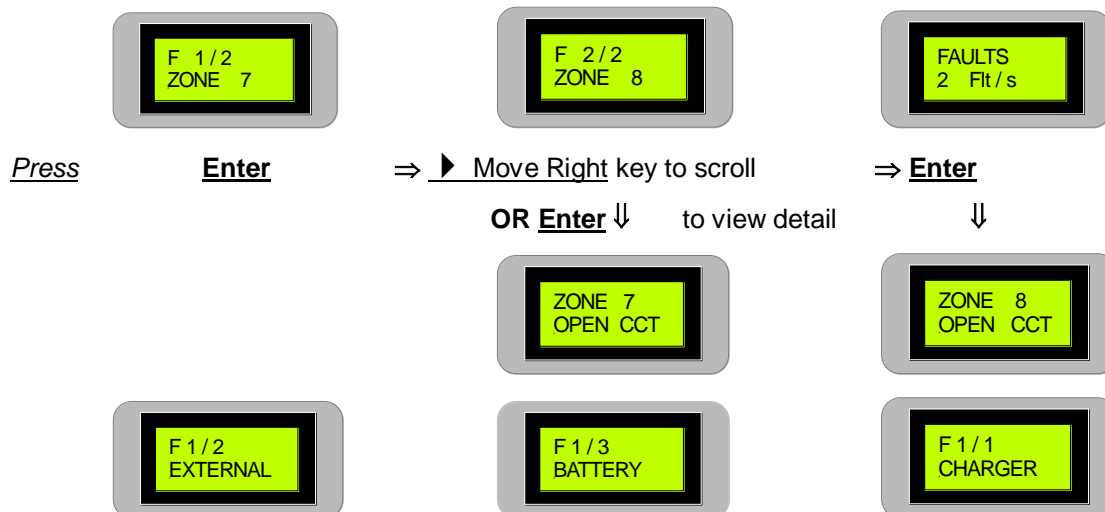
End of Sub – Menu

Returning to **STATUS** in the Main Menu ▶ Move Right to access **FAULTS**

4.2 Faults

Pressing Enter will display all faults in a sequential order. If there is more than one fault on the system the operator can scroll through each fault by using the ◀ Move Left and ▶ Right keys. Pressing Enter again at each Fault will display more detailed information.

Accessing information on 2 Faults



LCD Screen Examples of System Status Faults

System Fault

SYSTEM FAULT

LED flashing

Battery Fault

POWER FAULT

LED flashing

POWER LED on

Power Fault

POWER FAULT

LED flashing

POWER LED off



Note: *FAULT LED will be flashing (for all 3 FAULTS)*

5 Level 2 Access

At this level the operator is expected to have undergone training so as to be able to;

- Test crucial elements of the system and; **TEST**
- Disable dedicated facilities that may be in fault. **DISABLE**

Enable the keyswitch then in the **Main Menu** from **FAULTS** ▶ **Move Right** for **TEST**

5.1 Tests

Press **Enter** to access the available menus.

The available menus are;

Alarm Test	Fault Test	Walk Test	Lamp Test	Battery Test
------------	------------	-----------	-----------	--------------

To initiate one of the above tests press the ▶ Move Right / ◀ Move Left key to move through the menu. Press **Enter**, then select the Zone by using the ▲ Move Up and / or ▼ Move Down keys until the desired Zone number is displayed, press **Enter** to start the test.

Alarm Test of each Zone

Once the test is commenced the Buzzer will sound and the common Fire and Zone Fire LED's will flash. Press **SILENCE BUZZER**, the Buzzer will be silenced and the common Fire and Zone Alarm LED's will be steady. Press **Reset** to return the panel to normal. The LCD will indicate the alarm has occurred and then toggle to display the Zone and descriptor of that Zone.



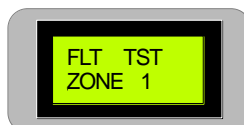
Fire LCD Sequence



Note: If a Zone has been programmed to be Non Latching the panel will only go into alarm for the normal time out period of 2 minutes and then automatically reset.

5.1.1 Fault Test of Each Zone

Once the test is commenced the Buzzer will rapidly turn on and off and the common Fault and Zone Fault LED's will flash. Press **SILENCE BUZZER**, the Buzzer will be silenced and the common Fault and Zone Fault LED's will continue to flash. Press **Reset** (Reset complete will be indicated on the LCD) to return the panel to normal **or Cancel** to go back to the Test Menu. The LCD will indicate the Fault Test has been implemented on the selected Zone.



5.1.2 Walk Test

ⓘ IMPORTANT: The Brigade, Agent Release and any other system specific signalling should be **DISABLED** prior to initiating this test.

A Walk Test, sets the Zone to Non latching and allows the technician to test detectors and MCP's on that Zone. When a detector or MCP is put into alarm the "Alarm Outputs" will operate, the corresponding "Zone Fire" LED will flash and the buzzer will sound.

The Zone will stay in Alarm until the MCP, or detector under test is reset or, the test is aborted by pressing Cancel. The LCD Display will toggle through the screens shown below.



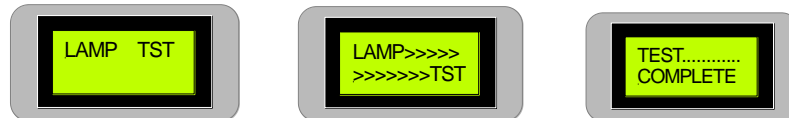
In the TEST END screen the operator has ten (10) seconds to enter the time before the test will commence OR, the test can be started by pressing Enter.

Only one zone at a time can be in test mode, all other zones will operate as normal.

The LCD will display which Zone is the in Walk Test mode.

Visual / Audible Indications - Lamp Test

Press the ► Move Right and / or ◀ Move Left key to move to the Lamp Test menu, press **Enter** and each LED on the panel will be sequentially turned on for one second and then off again. The Buzzer will sound at the completion of the test.



Press

Enter

Indicates the Test Progress

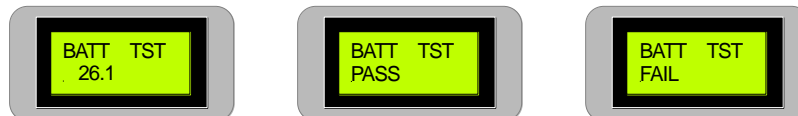
Test Successful



Note: The operator has to visually confirm each LED illuminates.

5.1.3 Battery Test

Press the ► Move Right and / or ◀ Move Left key to move to the Battery Test menu, Press Enter and the Battery Test will commence, that is the Charger will be disconnected from the battery and a dummy load placed across the battery for 60 seconds. The battery voltage should be above that specified (23.5 volts) at the end of the testing period, if not a FAILED message is displayed.



Battery Test Underway

Test Successful

Battery Failure

Back in the Main Menu From TEST Move Right to DISABLES

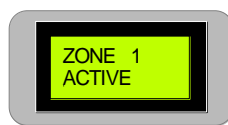
5.2 Disables

To display the number of Disables press **Enter** to access the menus then ◀ Move Left or ▶ Move Right to select the required menu. The number of Disable will be displayed.

Zone	Outputs	Relay	Sounder
Zones 1 to 8 are Active or Disable		Relays 1 to 8 are Active or Disable	Sounders 1 to 8 are Active or Disable
	Alarm 1 - 4	Fire	Fault
		Anc. Out	

5.2.1 Zone, Relay or Sounder

Press **Enter** and use the ◀ Move Left or ▶ Move Right keys to select the Zone, Relay or Sounder number then the ▲ Move up to key disable or ▼ Move Down key to make active (set) the required Zone, Relay or Sounder.



Press **Enter** ◀ ▶ Select Zone Number set, ▼ Active or ▲ Disabled



Note: X denotes the Zone number, substitute Relay or Sounder for those menus.

If a Zone or Zones are Disabled the Disabled LED for that Zone and the common Disabled LED will be illuminated. If a Relay or Relays, Sounder or Sounders are disabled only the common Disable LED will be illuminated. The Disable can be deactivated while in the Output menu or repeating the steps above to enable (make Active) individual Zones.

5.2.2 Outputs

Press Enter to access the Disable - Outputs sub-menus as seen below

Alarm 1 to 4	Fire	Fault	Anc. Out
--------------	------	-------	----------

Use the ▶ Move Right or ◀ Move Left keys to select the required menu and the ▲ Move Up key to Disable or ▼ the Move Down key to active.



If the:

- Alarm is Disabled the Alarm LED will be illuminated.
- Warning System is Disabled the Warning System LED will be illuminated.
- Fault is Disabled the Fault / Disable LED will be illuminated.
- Anc. Out is disabled the common Disabled LED will be illuminated.

Press Cancel to back out of the Disable Menu to the Main Menu.

Move Right to Enter the PASSWORD for level 3 Access



Note: Reminder: Press ENTER at the end of each selection to update the program.

6 Level 3 Access Programming

Level 3 is a technical level that allows a technician to;

- Initialise the FACP so it is capable of recognising how the system is constructed; and **SYSTEM**
- Program how it will present information as well as how it will react to a change of state of an input and / or output. **PROGRAM**

6.1 Password Entry

Returning to Faults in the Main Menu, Move Right for Password Entry to Level 3.

Press **Enter** and a flashing cursor will appear below the word PASSWORD. By using the ▲ Move up and ▼ Move down keys the number on the screen will be incremented accordingly. Once the first password number has been set use the ► Move right key to move to the next number to be set. This operation has to be repeated four times as the PASSWORD is a four digit code. If a number is incorrect it can be changed by using the ◀ Move Left and ► Right keys to position the cursor over the incorrect number. Once the four numbers have been set pressing **Enter** initiates the verification of the PASSWORD that has been entered. An incorrect PASSWORD will be displayed as REJECTED and return the operator to the first menu.

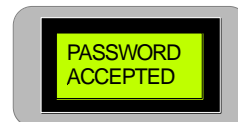


Press

Enter



Enter Password



Correct Password Entry

If the PASSWORD is accepted the screen will display STATUS. Use the ► Right keys to move through the menu to SYSTEM OR PROGRAM.



Note: The operator has 2 minutes to complete Password entry. Failure to enter the Password in this time results in the panel reverting to the default screen.



Note: The System and Program Menus are not accessible if an Alarm condition exists even if the correct Password is entered.

6.2 System

After entering the Level 3 Password and moving to the SYSTEM menu press **Enter** and the;

1. Zone DISABLED LED's will illuminate;

Common DISABLED LED will flash; and the

LCD will display;



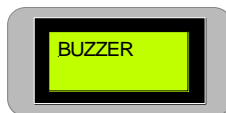
SYSTEM DISABLED



BUZZER

And then

Ignoring Buzzer, Mimic and Code menus (explained below) use the ► Move Right or ◀ Move Left keys to move through the menu and the ▲ Move Up key to set YES or ▼ Move Down key to set No. Yes meaning the facility / board / card has been fitted to the FACP and will be programmed in the Programming Menu, No meaning it has not been fitted and will not appear in the Programming Menu.



Typical Screen examples of the System Menu



6.2.1 Buzzer

This is the only facility in this Menu that has a Sub – Menu. Press **Enter** to access the Sub – Menu then the ◀ Move Left or ► Move Right key to select either; **Resound**, **Alarm** or **XTRA OUTPUT** then **Enter**. Set the **Resound**, **Alarm** by using the ▲ Move Up key to Yes (activate on alarm) or ▼ Move Down key for No (not activate on alarm). Set the **XTRA OUTPUT** option to act as a Reset or Buzzer function as per the system design configuration.

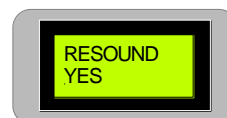
If the **XTRA OUT** output is selected set as a Reset or Buzzer function by using the ▲ Move Up for Buzzer or ▼ Move Down keys for Reset. Press **Enter** to update the program.



Resound Set to YES



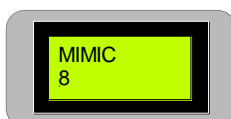
Alarm Set to YES



XTRA OUTPUT

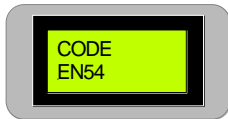
6.2.2 Mimic

This tells the FACP how many Zone Mimic Indicator Boards are on the system hence how many to look for. Set the number by using the ▼ Move Down and / or ▲ Move Up keys to increment to the desired number (maximum of 8).



6.2.3 Code

Code is the National Standard the Panel complies with. This is factory set and can not be altered.

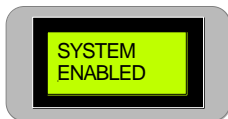


Back out to the Main Menu using the CANCEL key and move from the **SYSTEMS** Menu to the **PROGRAM** Menu using the ► Move Right key. When the CANCEL key is pressed the LCD will display SYSTEM ENABLED for one second and all the Disabled LED's will be turned off.

6.3 Program

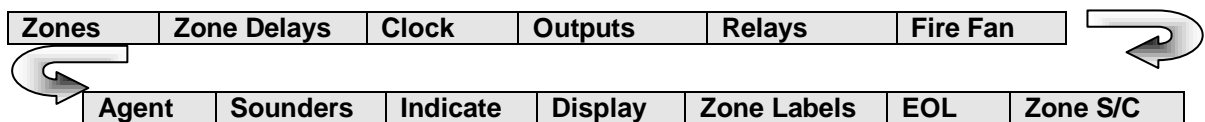


Note: From the Zones Menu use the ► Move Right key to advance through the **PROGRAM** Menu.



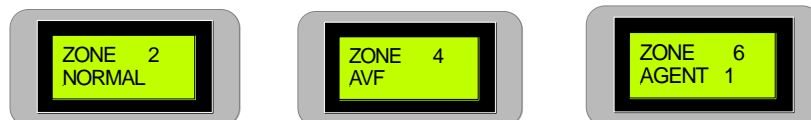
Pressing Enter to access the Program Menu will again disable the panel and the LED's will illuminate as they did in the Systems Menu.

The **PROGRAM** Menu consists of;



6.3.1 Zones

Press **Enter** and the Zones Menu will be displayed on the LCD screen. Pressing **Enter** again will access the Zones sub menu where first the ► Move Right and ◀ Move Left keys are used to select the Zone number and the ▲ Move Up and ▼ Move Down keys are used to set the functions within that Zone. The functions are;



Sample Zone Screens

▼ Move Down keys are used to set the functions within that Zone. The functions are;

Normal

Normal is selected if the Zone is required to initiate an alarm and latch until reset.

AVF

If AVF, (Alarm Verification Facility) or Co-incidence is set active a delay and re-sampling period is initiated to confirm an alarm condition actually exists on that Zone.

Non Latch

Non Latch if set will initiate an alarm only when the Zone is in alarm.

Agent 1

Agent 2

Note: Any Zone may be allocated to be a trigger zone

Select the Zone to initiate the release of the agent. If zones have already been allocated to change the zone first remove the allocation of the current zone and press ENTER to update the program then, reallocate the new zone and again press ENTER to update the program.

Double Knock

Sets Zones to output an Alarm condition from the Main Board Alarm Output when any 2 of the Zones selected in this screen go into alarm. Relay outputs are unaffected and will operate when any Zones goes into alarm.

6.3.2 Zone Delay

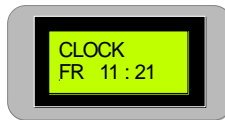
Press Enter to assign an alarm delay of between 30 and 300 seconds to a Zone using the ▲ Move Up and / or ▼ Move Down keys to select the Zone, (1- 8), then select the delay, then Enter to update the Program.



Press Cancel to return to the Zone menu and then ► Move Right to access the Clock Menu.

6.3.3 Clock

To set the day and time press Enter and the day will be highlighted. Use the ▲ Move Up or ▼ Move Down keys to step through the days of the week, then the ► Move Right key to access the hours and minutes. To access each digit use the ► Move Right and ◀ Move Left keys and to increment each digit use the ▲ Move Up and ▼ Move Down keys. Press Enter to set the time and then ► Move Right to access OUTPUTS Menu.



6.3.4 Outputs

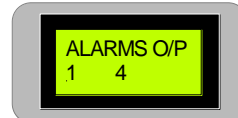
To assign Zones that will activate the monitored outputs press Enter and the sub menu will be made available for programming. The sub menu consists off;

Alarm 1 to 4	ANC Out	BGD ALM 1	BGD ALM 2	Fire Out
---------------------	----------------	------------------	------------------	-----------------

To move through the sub menu use the ► Move Right and ◀ Move Left keys. For each output press Enter, then the ◀ Move Left and ► Move Right to select the Zones that will



All 4 Alarms Selected



Alarms 1 and 4 Selected

Press Enter to Update the Program then Cancel to return to the Sub Menu and the ► Move Right and or ◀ Move Left keys to move through it. Repeat the above procedure to set or change the other Outputs as required.

6.3.5 Relays

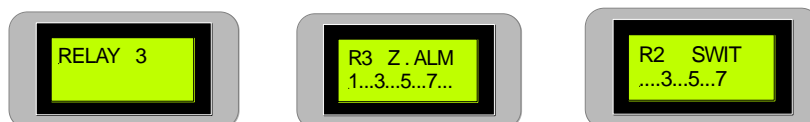
Press **Enter** then use the **►** Move Right and / or **◄** Move Left keys to select a relay that will be operated by the selected functions in the sub - menu . Press **Enter** to access the sub – menu then **►** Move Right and /or **◄** Move Left keys to toggle through the sub - menu structure. The sub menu consists off;

Zone Alarm	Zone Fault	Zone Disable	Input	Switch	Reset
------------	------------	--------------	-------	--------	-------

For:

R# Zone Alarm	R# Zone Fault	R# Zone Disable	R# Input	R# Switch	R# Reset
---------------	---------------	-----------------	----------	-----------	----------

Press **Enter** then **►** Move Right and /or **◄** Move Left keys to select the *Zone Alarm / Fault / Disable, Input or Switch* then **Enter**. Use the **►** Move Right and / or **◄** Move Left keys to select the Zones and the **▲** Move Up or **▼** Move Down keys to set it to be active or in-active. Active meaning the *Zone Alarm / Fault / Disable, Input or Switch* will operate the Relay where as in-active will prevent them from operating that relay.



Press **Enter** to update the Program and the **Cancel** to back out to the previous menu.

For:

Reset	Latch
-------	-------



Press **Enter** then the **►** Move Right and /or **◄** Move Left keys to select Reset or Latch then the **▲** Move Up or **▼** Move Down keys to set for Yes or No. Yes sets the Relays to be reset or Latched. Press **Enter** to update the Program and **Cancel** to back out to the previous Menu

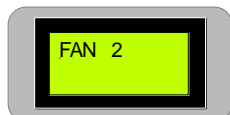
6.3.6 Fire Fan

The sub menu consists off;

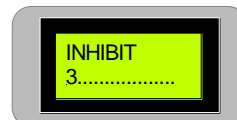
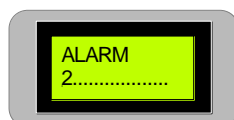
Alarm	Inhibit	Function
-------	---------	----------

For:

Alarm	Inhibit
-------	---------



Press **Enter** then use the ▶ Move Right and / or ◀ Move Left keys to select the Fire Fan that will be controlled by the selected functions in the sub - menu . Press **Enter** to access the sub – menu then ▶ Move Right and /or ◀ Move Left keys to toggle through the sub - menu structure. Press **Enter** then ▶ Move Right and /or ◀ Move Left keys to select the Zone/s that will activate or deactivate the control when it is in alarm or inhibited. Use the ▲ Move Up or ▼ Move Down keys to set it to active or in-active. Active meaning the Zone will operate the control where as in-active will prevent that Zone from having control.

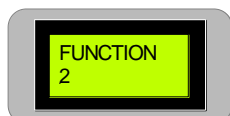


For:

Function

Press **Enter** and the cursor will flash over the number 0, 1 or 2, then press the ▲ Move Up or ▼ Move Down keys to select the required Function. Selection relies on how the inputs / outputs have been physically wired as outlined below.

1. Equates to a 3 wire Start / Stop, Run & Common.
2. Equates to a 4 wire Start / Stop, Run, Stop & Common.
3. Equates to a 5 wire Start / Stop, Run, Stop, Fault & Common.



Press **Enter** to update the Program and then **Cancel** to back out of the Menu.

6.3.7 Agent

If Yes was selected in the SYSTEM menu the Sub – Menu seen below will be available. Press Enter to access the sub-menu. The sub-menu consists off;

Release			Press Sw	Auto Delay	Man Delay	No LCP's
Solenoid	Pyrogen	Metron	NO/NC/None	0 – 60s	0 – 60s	0 - 16

Using ► Move Right or ◀ Move Left select either Release, Sense Switch, Auto Delay, Manual Delay or the Number of Local Control Panels (LCP's), then the Enter key to access the menu and the ▲ Move Up or ▼ Move Down keys to set the required function or number.

In the Delay Menus the ▲ Move Up and ▼ Move Down keys are used to set or alter the time delay in 5 second increments.

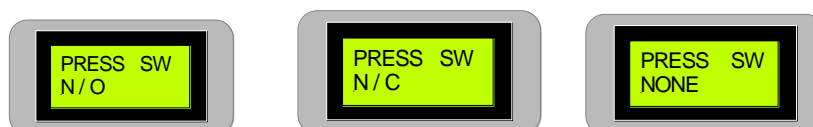
Press Enter to update each Program and Cancel to back out of the Menu.

Release

Identifies the type of release mechanism. *[Solenoid / Pyrogen / Metron]*.

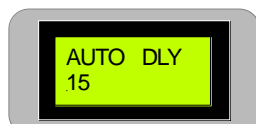


Press SW



Sets the type of monitor release contact. *(NO / NC / None)*

Auto Delay



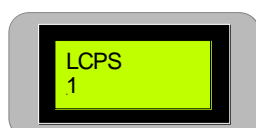
Sets the delay for the automatic release of the agent. *[0 – 60 seconds set in 5 second increments]*

Man Delay



Sets the delay for when the agent is released manually. *[0 – 60 seconds set in 5 second increments]*

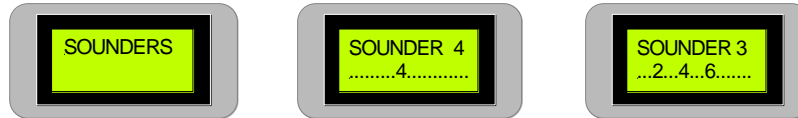
No LCP'S



Tells the FACP how many Local Control Panels are in service. *[0 – 4]*

6.3.8 Sounders

Press Enter then use the ► Move Right and ◀ Move Left keys to select a sounder. Press Enter again and use the ► Move Right and ◀ Move Left keys to select a Sounder, Press Enter again and the ▲ Move Up and ▼ Move down keys to set that Sounder to a Zone to activate or not activate the selected sounder.

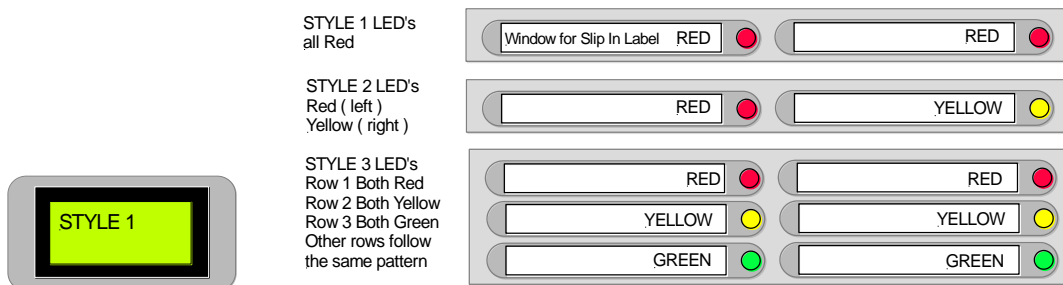


Press Enter to update each Program and Cancel to back out of the Menu.

6.3.9 Indicate

If a General Indicator Card is selected via the System Menu then all the tri-coloured LED's default to red. To alter the colour of the LED select Indicate then press Enter.

The LCD will display "Style 1". Use the ▲ Move Up and the ▼ Move Down keys to scroll through the different styles.

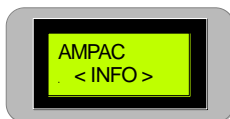


Examples of the different "Styles" available through the Indicate Menu are shown above. Note only the top display is shown in the first 2 examples where as the first 3 top displays are shown in Style 3

Once the "Style has been selected press Enter to update the Program and Cancel to back out of the Menu.

6.3.10 Display

To set the message, FACP or company name press Enter and use the ► Move Right and ◀ Move Left keys to move through the word to select a letter and the ▲ Move Up and the ▼ Move Down keys to move through the alphabet. A maximum of 16 characters are available for this message.



Press Enter to update each Program and Cancel to back out of the Menu.

6.3.11 Zone Labels

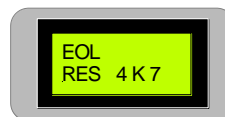
To name the Zones press Enter then the ► Move Right and / or the ◀ Move Left keys to select a Zone. Press Enter and use the ◀ Move left and / or ► Move Right keys to move the cursor through the structure of the word and the ▲ Move Up and ▼ Move Down keys to move through the alphabet.



Press Enter to update each Program and Cancel to back out of the Menu.

6.3.12 EOL (END OF LINE)

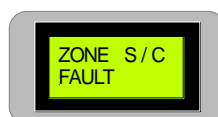
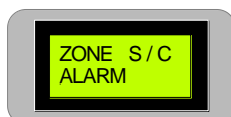
Press Enter and use the ▲ Move Up and ▼ Move Down keys to select the EOL option. The options are CAP 10 μ F, RES 3K3, 4K7, 6K8 & 10K.



Press Enter to update each Program and Cancel to back out of the Menu.

6.3.13 Zone S/C

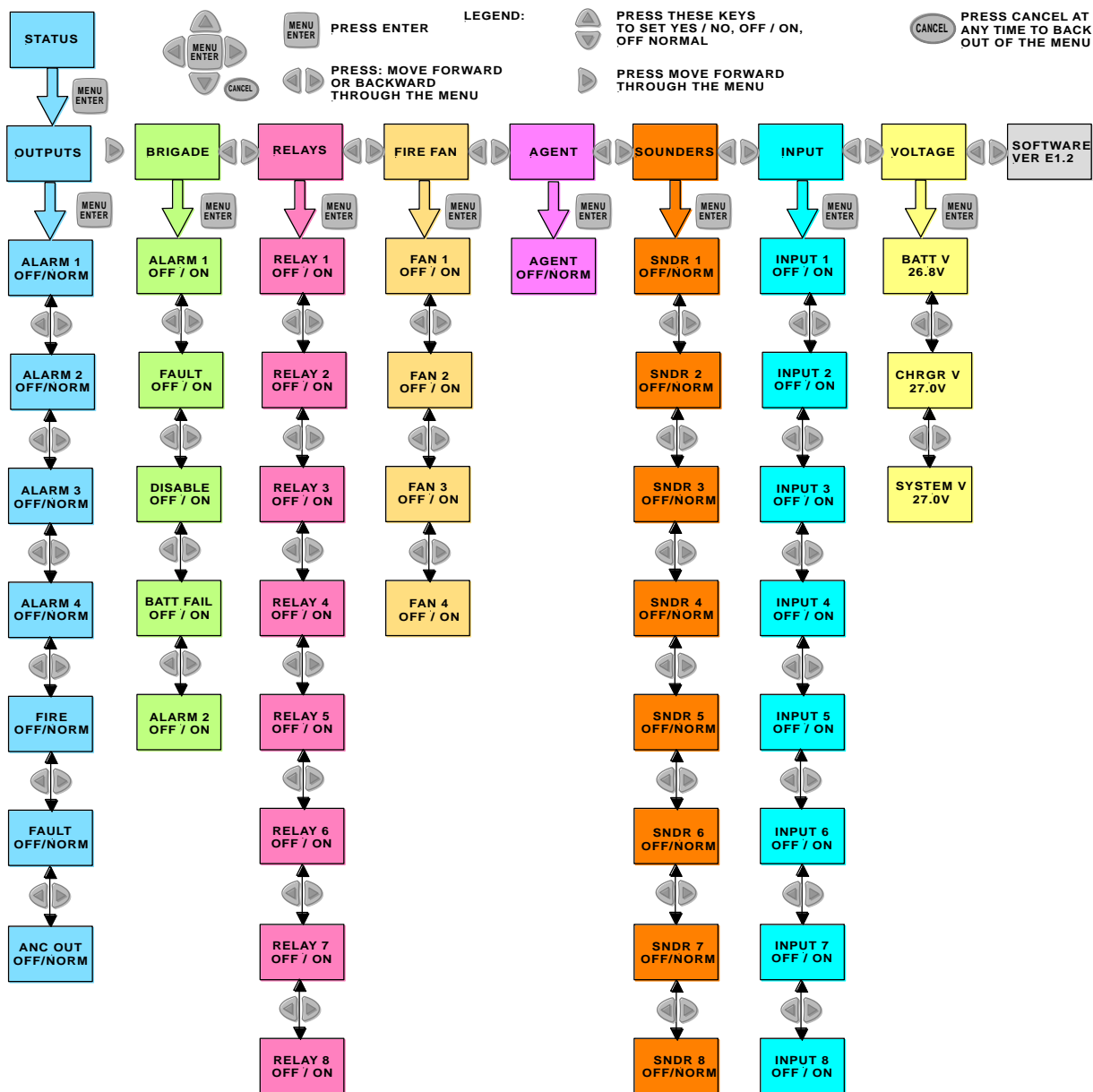
Press Enter and use the ▲ Move Up or ▼ Move Down key to set the panel to initiate either an Alarm or Fault when a Zone short circuited condition exists.



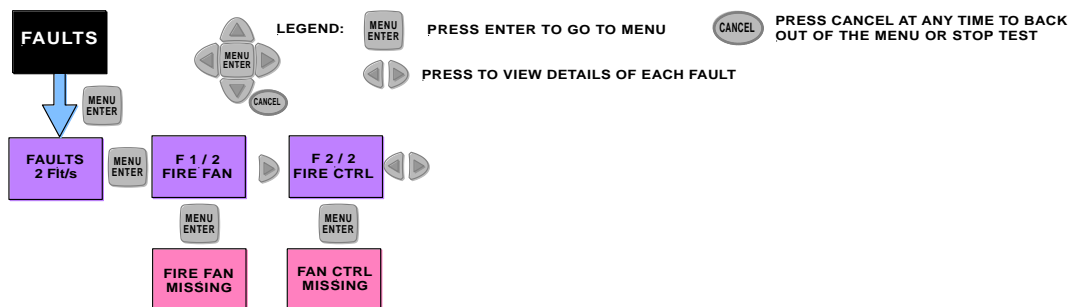
Press Enter to update each Program and Cancel to back out of the Menu.

7 Appendix A: EN54 Menu Structure

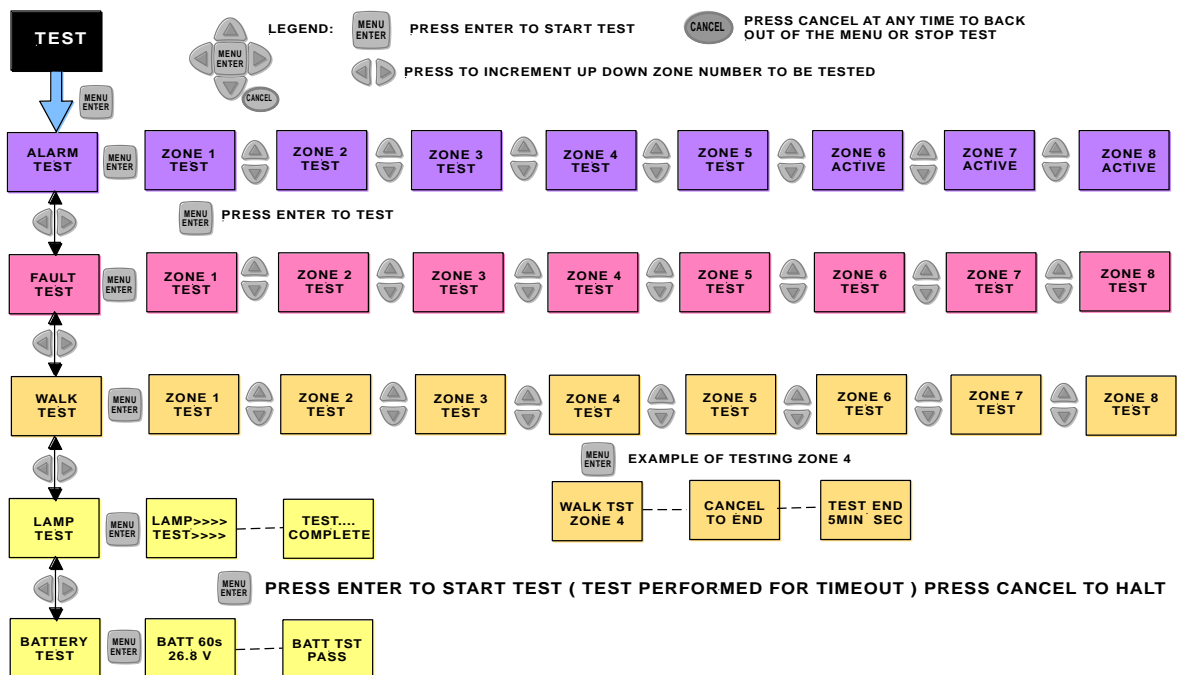
7.1 Status



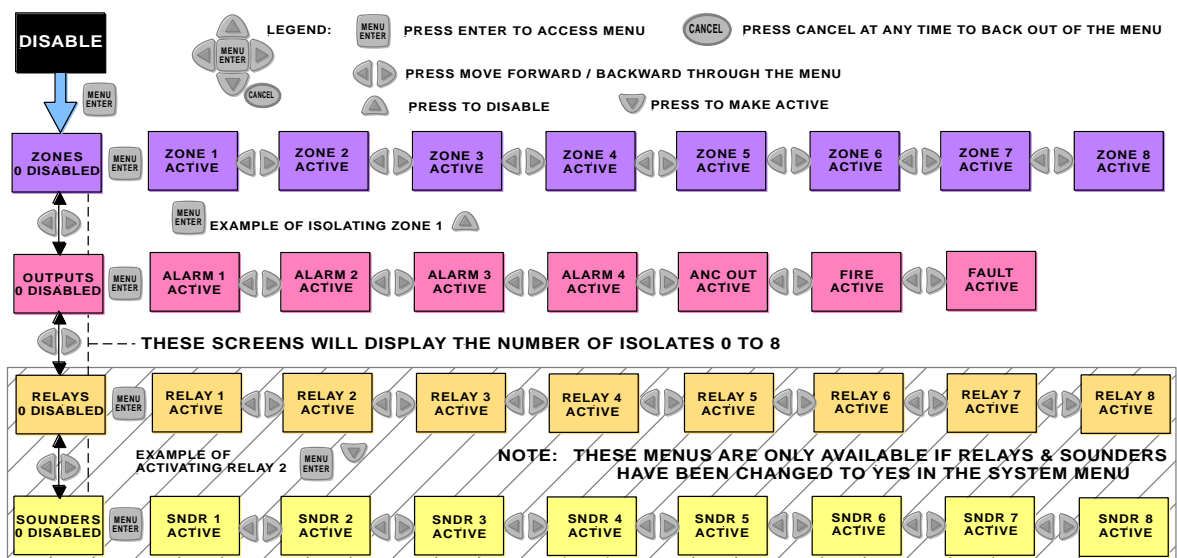
7.2 Faults



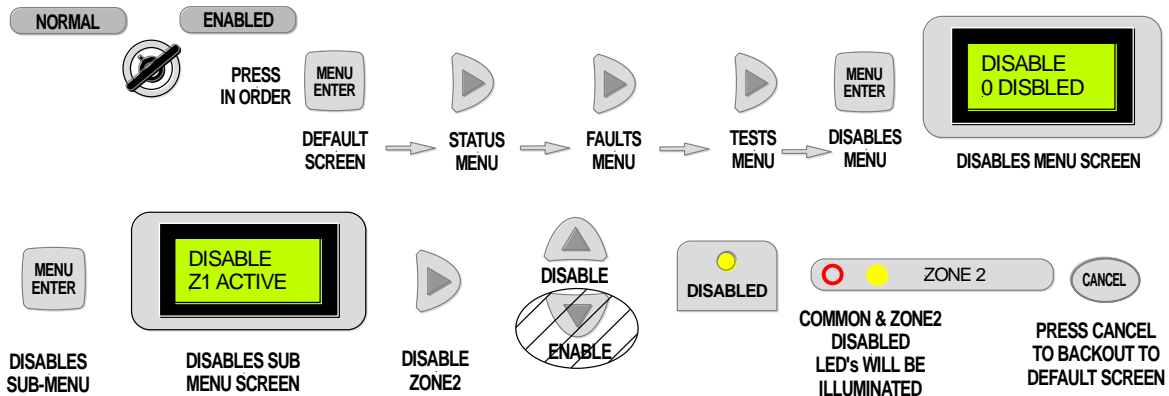
7.3 Test



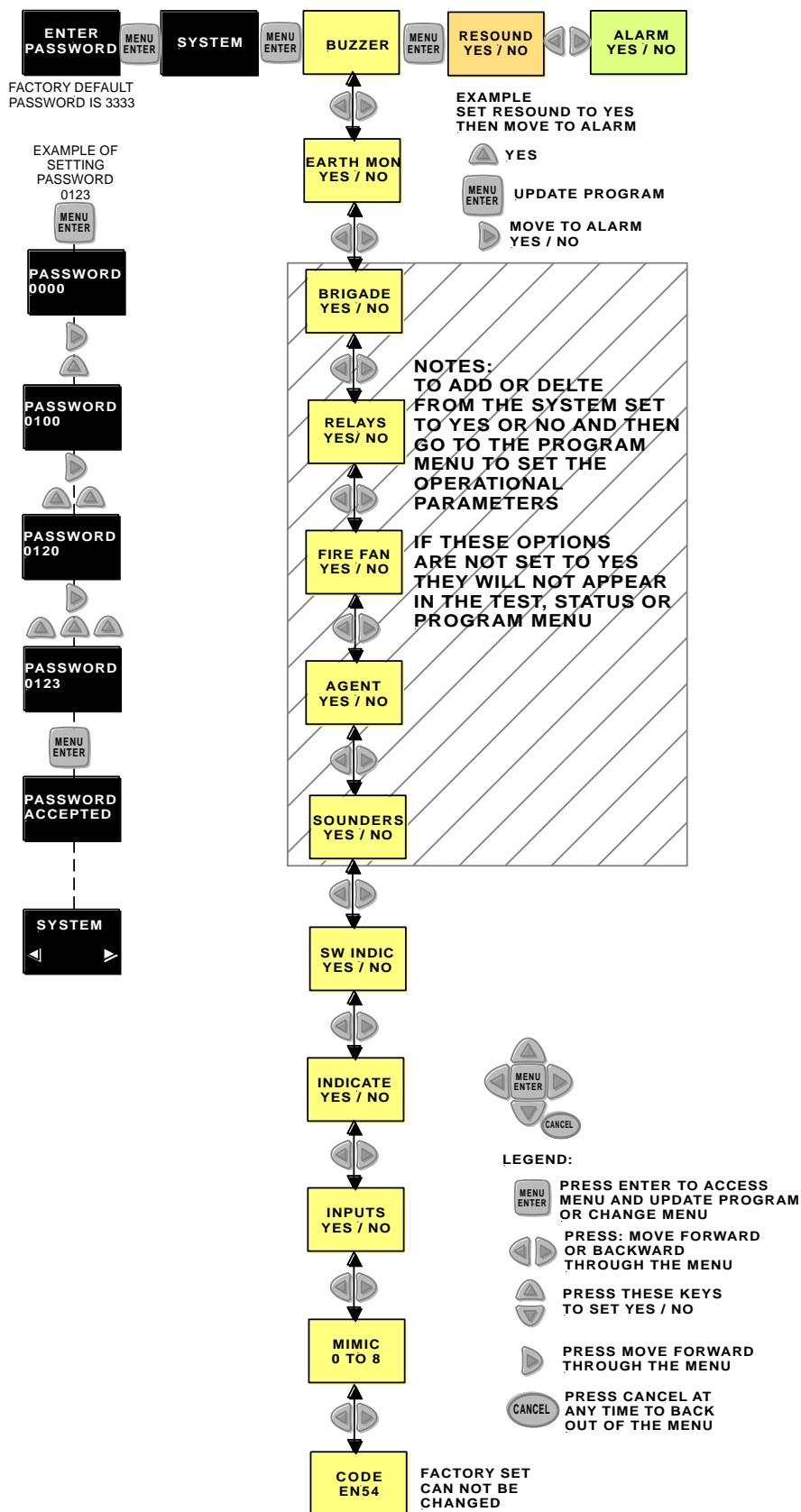
7.4 Disable



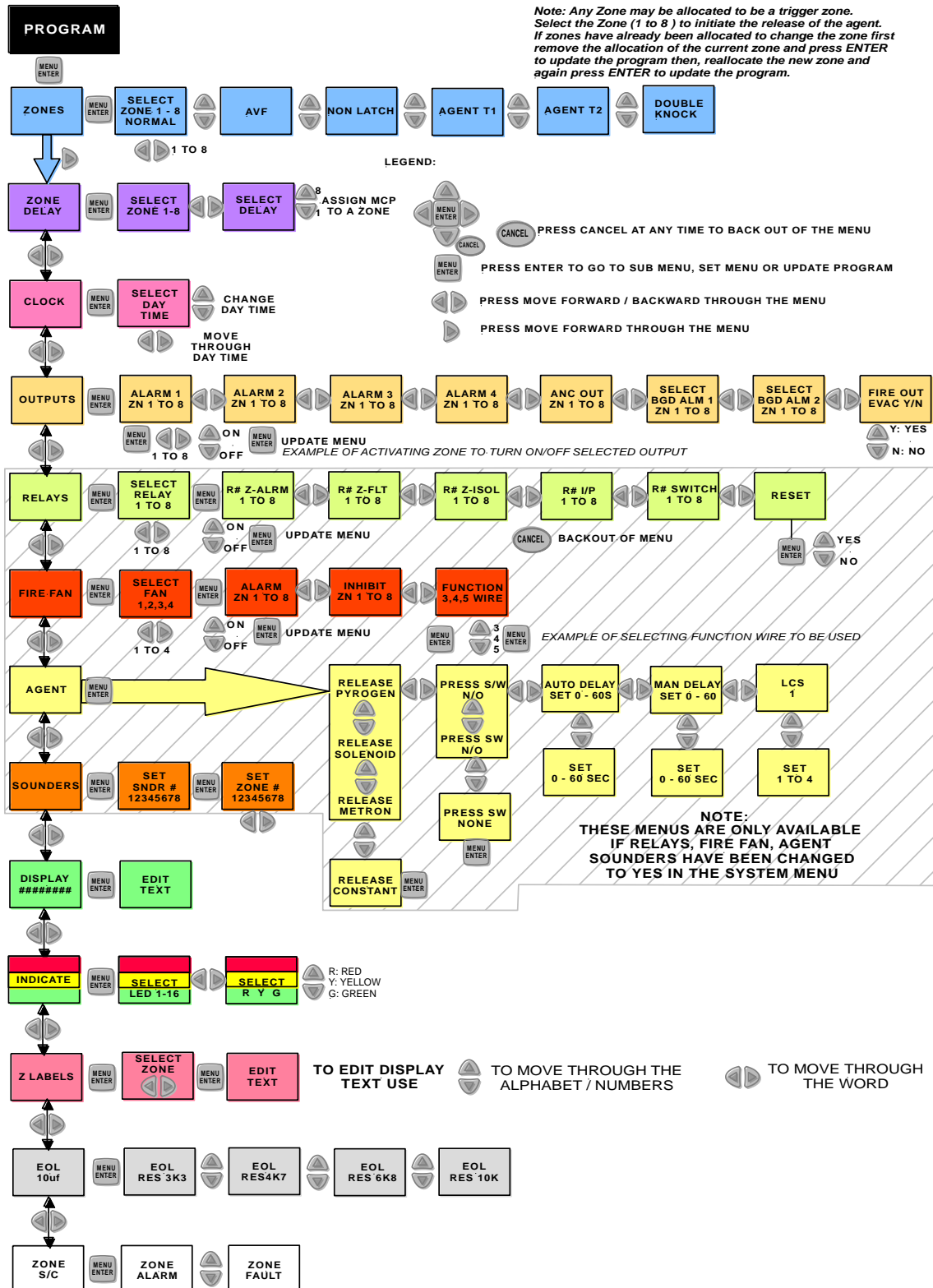
e.g. The following example DISABLES ZONE 2. Place the keyswitch to the ENABLED position



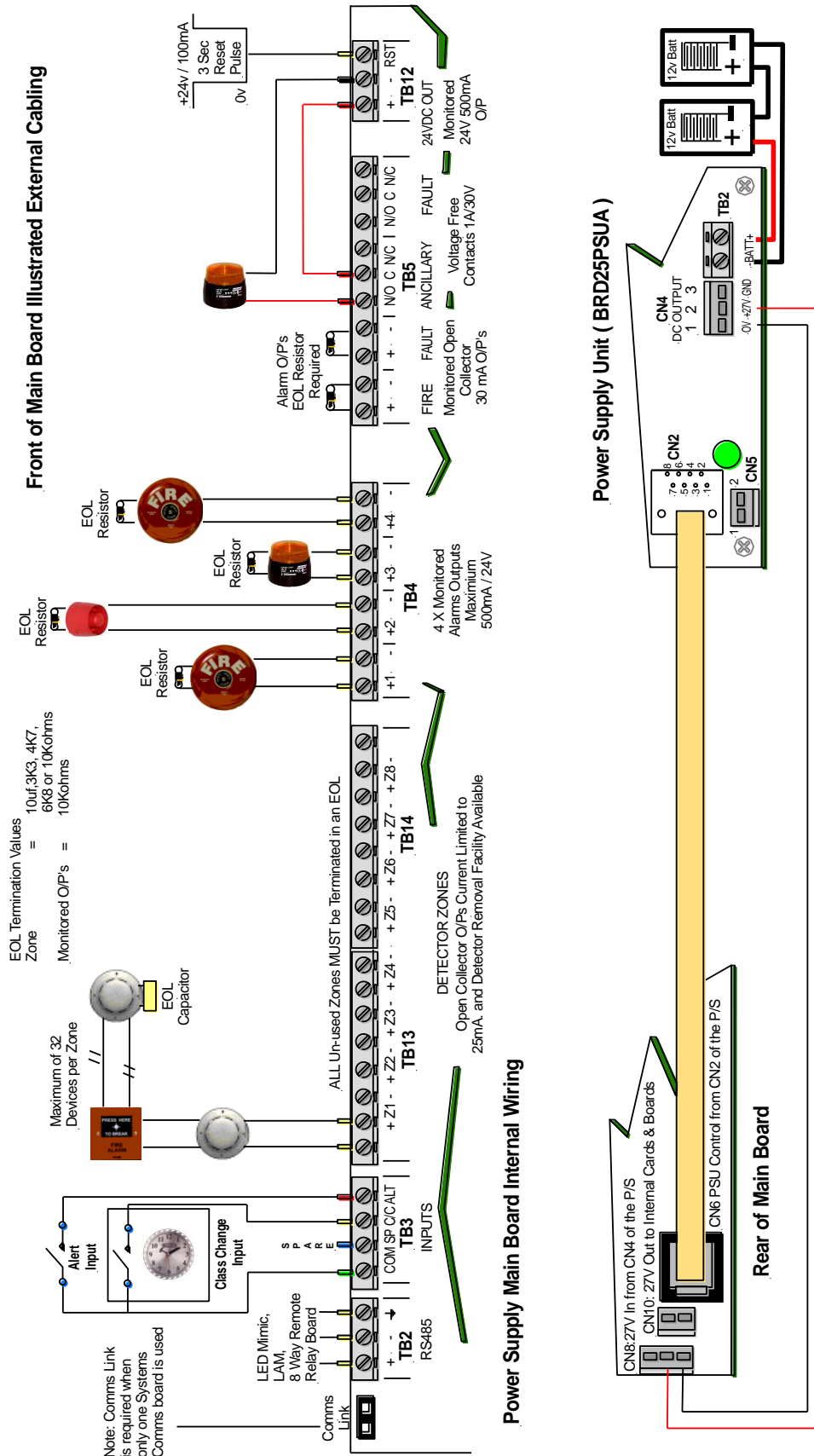
7.5 System



7.6 Program



8 Appendix B: Simple Example Wiring Diagram of a Basic FACP



9 Appendix C: EN54 ABS Inner Front Panel Configuration Labelling

ZONE		CONFIGURATION	BELL		WARN SYS	ACF	ASE	ALARM	B ALARM 1	B ALARM 2	RELAY 1	RELAY 2	RELAY 3	RELAY 4	RELAY 5	RELAY 6	RELAY 7	RELAY 8	SOUNDER 1	SOUNDER 2	SOUNDER 3	SOUNDER 4	SOUNDER 5	SOUNDER 6	SOUNDER 7	SOUNDER 8	FAN 1	FAN 2	FAN 3	FAN 4
1		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
2		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
3		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
4		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
5		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
6		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
7		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
8		NORM / AVF / NON / SELF / AT1 / AT2									A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I	A / F / I												
EOL VALUE		3K3 / 4K7 / 6K8 / 10K / CAP									INPUT SWITCH																			
MCP ZONE		1 / 2 / 3 / 4 / 5 / 6 / 7 / 8									ACF ISOL	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N												
No LAMs		1 / 2 / 3 / 4									RESET	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N												
											LATCHING	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N	Y / N												

Instructions to Installer

A, B, D, F and H Using a permanent marking pen cross out the conditions that do not apply.

C, E, and G Using a permanent marking pen cross (X) the box for the option that is set for the Zone.

- A** Indicates the configuration of each Zone Normal (NORM), AVF, Non-latching (NON), Self latching (SELF) Agent 1 (AT1), Agent 2 (AT2).
- B** Indicates what EOL value has been selected, what Zone has MCP's, and the number of LAM's controlled by the FACP.
- C** Indicates what Zones controls what Main Card Output.
- D** Indicates if Alarm (A), Fault (F) or Isolate (I) controls the designated relay and the type of input it has.
- E** Indicates what Zones control what Sounders.
- F** Indicates the type of Agent Release fitted the type and duration of delay and the number Local Control Stations fitted.
- G** Indicates what Zone controls what Fan circuit.
- H** Indicates the type of wire Function and whether or not latching and / or ACF Isolate is set.

UNCONTROLLED DOCUMENT

NOTE: Due to AMPAC's commitment to continuous improvement specifications may change without notice